

## ABSTRACT OF THE DISCLOSURE

A method of non-invasive estimation of round trip time (RTT) between a sender and receiver in a packet oriented acknowledgment based transmission system uses a probe to monitor signals transmitted between the sender and receiver at any point in the transmission system. For a presettable number of acknowledgments in a sequence of acknowledgments received by the probe within a time interval, the time stamps of the acknowledgments are compared (i) with the timestamps of the packets received before the acknowledgments to determine an estimated value for the round trip time between the probe and receiver, and (ii) with the timestamps of the packets received after the acknowledgments to determine an estimated value for the round trip time between the probe and sender. Also sequence numbers of the same group of acknowledgments are compared with the packets encountered to perform a distance function along the sequence numbers themselves. The estimated values for probe-sender and probe-receiver are added to determine the estimation of round trip time between the sender and receiver.